

Sturgis (F.R.)

WHAT EFFECT DOES SYPHILIS

HAVE UPON THE

DURATION OF LIFE?

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MR. EDITOR:—Your welcome letter was duly received a short time since, and in it I found enclosed the list of questions you promised me, bearing upon the question, "What influence does syphilis have upon the duration of life as regards insurance?"

The question, sir, is a difficult one to answer, and indeed the reply must in its very nature be approximate, and not absolute, there being so many points upon which no positive reply could be given. Do not, therefore, feel disappointed if, at the outset, I warn you that what I am about to write must be accepted as approaching to, and I trust very closely, the truth, and yet is not the truth itself.

Your first question is, "In the upper and middle classes does syphilis to any extent shorten the 'expectation of life'?" in other words, 'Is a man who has had true syphilis as likely to attain the full 'expectation' assigned to him at any given age above twenty-five, as another man of the same age who has not had 'syphilis;' both men, of course, to be in all other respects subject to the same circumstances of life and hygienic influence?"

The mere fact of a man having had acquired syphilis does not of necessity imply that his life is shortened or blighted, and in the upper classes the chances are very largely in favor of his entire recovery from the disease; and by that I mean he will live his life as comfortably and as healthily as his companions who have escaped infection. This applies to the majority of cases; there are, undoubtedly, some whom it would be unwise to accept as risks, but of these I shall speak more fully further on.

Fortunately for the human family, this disease has much abated in severity and virulence since the days of

R. B. 11 [Rep. from: Med. Rec., N.Y., 1874, ix.]

the earlier writers on the subject, since the time of Grünpeck (who was himself a victim), Fracastor, Von Hütten, and others. Then the unlucky wight who contracted syphilis was a pariah and an outcast, shunned by all acquaintances and friends, and doomed to solitude. Were the same course pursued now, dear Doctor, imagine what a howling waste society would become!

The picture drawn for us by these older writers was a truly horrible one, and let us be thankful that we of the present see such but seldom.

Nowadays it is unusual to see the frightful loss of tissue which was not uncommon a century ago, and I think we may safely lay it down as a rule, that the disease seldom goes beyond the earlier stages. In the lower classes, and in those who are neglectful of treatment, or who are subject to some hereditary taint, the disease assumes its worst forms, evincing, as it were, its capacity for mischief.

But even in the lower classes it is surprising to see how seldom syphilis proves fatal. I have compiled the following statistics from the records of the London Hospitals, and from other sources, and Hospital Records are specially to be preferred, as among the lower classes, who constitute the bulk of patients, the fatality is more likely to be greater than among the upper classes. At St. Thomas's Hospital, in the six years from 1866 to 1871 inclusive, 130 cases were treated; of these six died (a little over 4 per cent.).

At St. Bartholomew's Hospital, in the twelve years from 1860 to 1871 inclusive, 2,292 cases were treated; of these 23 died (a little over one per cent.). At the London Hospital, for the three years from 1863 to 1865 inclusive, 209 were treated; of these 7 died (a little over 3 per cent.). At the St. George's Hospital, for the five years from 1866 to 1870 inclusive, 307 cases were treated; of these 5 died (or about $1\frac{1}{2}$ per cent.).

Adding these numbers together, we find the total amount to be cases = 2,938, deaths, 41, or nearly $1\frac{1}{2}$ per cent.

I subjoin the statistics in detail. I have used those of the secondary and tertiary forms only, and not the primary or congenital ones, as it would be manifestly improper to do so; the former, because they are not fatal, the latter, because they occur in persons who would not be insured on account of their age.

I am very sorry that I have so few statistics to present, but would suggest to you, in your capacity as

medical adviser to a life insurance company, to find out, if possible, what proportion of deaths among your policy-holders was due to syphilis. In that way only can you arrive at anything settled, as of the hospital cases we do not know how many ultimately died of their disease, nor do I know any way of finding out.

	Number of cases.	Cured and relieved.	Unrelieved.	Died.	Percentage of deaths to whole No. of cases.	Discharged for other reasons.	Remaining in Hospital.
<i>St. Thomas.</i>							
1866.....	29	25	2	2			
1867.....	6	4	—	2			
1868.....	11	7	4	—			
1869.....	29	26	3	—			
1870.....	18	15	2	1			
1871.....	37	33	3	1			
<i>St. Bartholomew.</i>	130	110	14	6	+4		
1860-1864 inclusive.	900	894	—	6			
1865.....	249	203	5	2		39	
1866.....	257	220	5	1		31	
1867.....	220	192	—	4		24	
1868 (No record.)							
1869.....	186	156	—	2			23
1870.....	261	224	4	7			26
1871.....	219	203	2	1			13
<i>London.</i>	2292	2092	16	23	+1	94	67
1863.....	41	37	—	3			1
1864.....	124	102	1	3		4	14
1865.....	44	39	4	1			
<i>St. George.</i>	209	178	5	7	+3	4	15
1866.....	59	—	1				
1867.....	53	—	1				
1868.....	59	—	1				
1869.....	57	—	1				
1870.....	59	—	1				
	307		5		1½		

Total No. of cases	2938
“ “ “ deaths	41
Percentage of deaths to whole No. of cases	+1

If we return to the records of mortality in large cities and in different countries, we find that syphilis is not such a fatal disease as compared with typhoid, phthisis, etc. I append for your consideration the mortuary figures of New York and Philadelphia for 1871, as

taken from the reports of the State Boards of Health of those cities, and of London, copied from the Registrar-General's Report for the same year:

	Total No. Deaths.	Deaths due to Syphilis.	
New York.....	26,976	142,	a little over 5-10 per cent.
Philadelphia.....	16,993	19,	" 1-10 "
London.....	80,434	352,	" 4-10 "

Here are the death records for the United States and England:

	Total Deaths.	From Syphilis.	
U. States, census of 1870,	492,263	590,	a little over 1-10 per cent.
England, " 1871,	514,879	1,742, or	" 3-10 "

On the causes of death the hospital reports are very vague, but such as they are, I give them you.

Of the six deaths at St. Thomas's Hospital, the cause of only one is given, viz., where the patient, entering in a semi-comatose condition, was found to be suffering from gummata on the internal surface of the left middle lobe and right anterior lobe of cerebrum.

The causes of death among the twenty-three cases at St. Bartholomew are as follows: 1 tuberculosis, apparently independent of syphilis; 9 of exhaustion (2 of these after tracheotomy); 2 of pleurisy and bronchitis, not stated as syphilitic; 1 from peritonitis and exhaustion from anal fistula; and 1 from erysipelas. The causes in the cases of the remaining 9 are not given.

None of the causes of death among the patients of the London are given; and among the St. George's but one, *i.e.*, œdema glottidis, from necrosis of the thyroid cartilage and denudation of the perichondrium.

Meagre and unsatisfactory as are the hospital notes with regard to the deaths, one cause strikes us at the first glance as prominent, and that is exhaustion. I pointed out, in a paper contributed to the *American Journal of the Medical Sciences* for July, 1873, how dangerous this form of the disease is, and what bearing it has upon the prognosis. My opinion remains the same as when I first wrote the paragraph, which is as follows:

"One of the most serious, and, fortunately, one of the least common of the results of syphilis, is that known as 'syphilitic cachexia,' where it would seem as though the system, becoming entirely saturated by the poison, had lost all functional and vital power, the patient sinks slowly, inch by inch, in spite of all that can be done, and finally succumbs to some inter-

current disease, the severity of which is entirely disproportionate to the result. As may readily be conceived, the prognosis is very unfavorable."

To revert for a moment to our figures. We find the average percentage to be about 2 per cent., and that, too, in the lower classes, among whom we should expect to find syphilis most fatal. Granting these premises, the probabilities are in favor of the percentage among the rich and well-to-do being much less. One objection may here be urged—and a very pertinent one—that among the better classes every effort would be made to suppress the real cause of death, and that the physician *might be unable* to assign the proximate or even the remote cause.

But among the lower classes these considerations would be apt to have but little weight, and if among them we find such a small percentage, I think, in the absence of any evidence to the contrary, we may fairly argue the proportion among the upper classes as inconsiderable. Saying it is as much as 1 per cent., would the risk be such a bad one?

Before leaving this subject, my dear Doctor, I may be pardoned if I quote from one who is considered authority in Germany, and by comparing his statistics see how far they agree with those already compiled:

"The total of syphilitic patients in the various wards of the k. k. allgem. Krankenhaus, in Vienna, for the year 1862, amounted to 1,097; of these 667 were males, 430 females.

"The number of deaths was 8; 6 males, 2 females. Percentage = 7-10 per cent.

"The causes of death were, for the most part, tuberculosis pulmonum, nephritis albuminurica; one woman died from perimetritis septica."*

Query 2.—"What are the circumstances (as regards *habits, age, occupation, climate, social standing, marriage or celibacy, and physique*) which favor or hasten this deteriorating influence of syphilis?"

For convenience' sake I shall divide these various influences into two different groups: 1st, the hygienic; and 2d, the physiological. Among the first would be ranked habits, occupation, climate, social standing, marriage or celibacy; and among the second, physique, age, race, and hereditary tendencies.

To commence with the first group, the first question which challenges our attention is, What part do habits play in this disease?

* Zeissl. Lehrbuch der Syph., etc., 2d ed., vol. ii., p. 83.

I must beg you to bear in mind the two groups into which acquired syphilis may be divided, viz.: the benign and the malignant; and this is important, because your opinion will vary according as you have to deal with one or the other. Poverty, misery, insufficient food, and excessive drink, all play their part in intensifying the symptoms of this disease, and transform what might, perhaps, have been a mild attack, into one severe and dangerous. The picture drawn by Zeissl,* as to the effects of dirt, poverty, and defective sanitary measures, is not overdone, and the simple reason why we see so little of it is because our country is not so thickly populated, in proportion to its size, as is Austria. But here, in New York, those curious in such matters can see some of the effects of these agents by visiting the poor quarters of this city and the dispensaries. Lancereaux (*Traité historique et pratique de la Syphilis*, 1866), gives a case bearing upon the influence alcohol exercises upon this disease, and its instructiveness shall be my excuse for introducing it here.

"A patient who had been under my care for more than a year for a visceral syphilis (of the liver, spleen, and ganglia), finding himself better, and believing himself actually well, thought he might, without danger, abate the severity of the régime which had been prescribed. But an exostosis of the anterior portion of the forehead appeared as the consequence of a somewhat prolonged debauch. Under appropriate remedies this rapidly disappeared. Some while after, the patient, believing himself entirely well, indulged in another debauch, which was followed by a fresh exostosis at the same point."

Occupation has only an indirect bearing upon syphilis, and such trades or business which are in themselves confining or unhealthy, as tailoring, cobbling, and the like, are not the best for syphilitics.

Climate is an important factor in the problem which we are trying to solve, and here is a point where physicians can give advice with better chance of being listened to than where a man's habits are concerned. Extremes of temperature, whether of heat or cold, as well as sudden variations, are bad, and the countries included in what is known as the temperate zone are where syphilis shows its mildest characters.

In summing up the evidence upon this point, Lancereaux (op. cit.) says: "En résumé, un climat qui

* *Lehrbuch der Syphilis*, etc., 2d ed., vol. ii., p. 14.

varie peu, dont la temperature est modérée et à peine differente de celle du lieu où la maladie a été contractée est celui qu'à l'exemple de Sydenham on doit rechercher de préférence pour les syphilitiques," and Swediaur in his "Traité des maladies Syphilitiques," t. ii., p. 67, is no less positive when he writes, "La syphilis qui se montre pour la première fois dans un climat quelconque, est très violente dans les effets; *mais elle l'est beaucoup plus lorsqu'elle est importée d'un pays chaud dans un climat froid.*"

Social Standing.—Some of what was said under the head of hygiene will apply here, inasmuch as a good social position preargues more or less comfort and ability to provide for one's health and guard against illness. Bad ventilation, lack of warmth, insufficient or poor food, by acting as so many depressing agents, furnish the disease opportunities for extending its ravages and assuming its worst phases.

Marriage or Celibacy.—Marriage or celibacy, *per se*, influences the course of syphilis only so far as they affect the general health or well-being of the patient, and marriage would perhaps diminish the chances of the later stages supervening by lessening the incentives to debauchery and loss of the general health and strength. But beyond that I think it would have very little influence.

In this connection I would call to your mind Dr. Stark's statistics of the comparative longevity of married and single people, in which the former have decidedly the advantage.

This brings us to the second group, the physiological, under which were included physique, age, race, and hereditary tendencies.

The first, physique, must be dealt with in a general way, for it stands to reason, *cæteris paribus*, that a robust person of strong physique and good constitution will stand a better chance of overcoming the disease than will a weak and sickly one.

The second, age, is perhaps the most important factor in this intricate and difficult problem. As Ricord has pithily put it, "Il ne fait pas bon de prendre la vérole dans la vieillesse," and he might have added, "ni dans la jeunesse." Statistics show that a large percentage of deaths from syphilis occur in those under 5 years of age; but as this does not concern us at the present moment, we may pass it by with this simple notice of it. Most of the authorities of the present day are agreed in the opinion that syphilis, when contracted in advanced life, is more difficult

of recovery than when the infection occurs in youth, and a moment's reflection will show how much more likely is a degenerative and exhausting disease to work evil in the aged than in the young and tolerably robust adult.

Race.—There would seem to be good grounds for believing that syphilis is more malignant in some races of people than in others; thus, for example, among the negroes, I have noticed their lesions are more apt to take on the ulcerative forms, and to be less amenable to treatment; and my friend Dr. Charles S. Bull, of St. Louis, in a paper on "Syphilitic Iritis and its Complications," writes thus: "My attention has been called, during the last few months, to the peculiarly unfavorable course which syphilitic iritis seems to run, when it occurs in negroes; and on mentioning the subject to several of my colleagues, I was informed they had observed the same thing." Not only is this the case among the negroes, but among the inhabitants of the islands of the Pacific, and among the Indians of the continents of North and South America. Although, no doubt, partly dependent upon defective hygienic conditions of life, much of it is, I believe, due to race differences.

Hereditary predispositions.—Any inherited taint, whether tubercular, scrofulous, or otherwise, will undoubtedly be more or less affected by this disease, and will perhaps be accelerated by it, and vice versa. But what I wish especially to dwell upon now, is, what effect congenital syphilis would have upon the duration of life.

The larger proportion of deaths from syphilis occur in subjects under five years of age; indeed, if we may rely upon the published statistics, the average mortality is nearly 85 per cent. for New York City and over 63 per cent. for Philadelphia. This in the former city embraces a period of six years, in the latter of twelve. For the year 1871, in New York City, out of a total of 142 deaths from syphilis, 120 occurred in children under 5 years of age; in Philadelphia, out of 19 deaths, 12; and in London, out of 352 deaths, 314. Let us see, out of the remaining deaths, how many occurred before the thirtieth year was completed. In New York City, out of a balance of 22 deaths, 12 died before the 31st year.

In Philadelphia, out of a balance of 7 deaths, 2 died before the 31st year.

In London, out of a balance of 38 deaths, 21 died before the 31st year.

It is probable that the cause of the large proportion

of deaths between the age of five, and before the completion of the thirtieth year, is indirectly due to the influence which puberty exercises upon the development of the later symptoms of hereditary syphilis, and this view seems to be supported by the opinion of a recent French writer. He says: "Puberty in both sexes, and pregnancy and the menopause in women, like most diseases, play the part of occasional causes. The age of puberty is a time at which cases of late hereditary syphilis hardly ever fail to show themselves. Menstruation, and especially the menopause, act in the same manner as do pregnancy and childbirth, and like those two conditions, tend to favor the appearance of syphilitic lesions."*

I have taken the limit of thirty years, and assumed that the cases which proved fatal within that time were due to hereditary causes, and in this course I think I am justified for the following reasons: 1st, That the time during which syphilis is *acquired* is generally between the ages of twenty and thirty, a period when the disease is less likely to prove fatal, from the patient being better able to withstand the debilitating effects; and 2d, Because the disease seldom kills so rapidly as in ten years, and then only in exceptional cases. What the cause of death was in those who died under five years, will, I scarcely think, be questioned; it is not likely to have been from acquired disease, unless these infants were strangely precocious in their tastes and habits.

Out of those who died between 5 and 30 years of age, 4 died in New York between the ages of 5 and 20, and 8 between 20 and 30. The first set (4) we may at once dispose of. It is very unlikely that death would have been caused from syphilis acquired between the ages of 5 and 20. Of the remaining 8, between 20 and 30, although it is not so clear, it is still sufficiently improbable to cause doubt; so that we then have 10 deaths left which we can fairly ascribe to acquired syphilis. Of these, 6 died between 30 and 40, 2 between 40 and 50, and 2 between 50 and 60.

The Philadelphia record stands thus: Out of those who died between 5 and 30 years of age, 2 died between 20 and 30, leaving 5 deaths from acquired syphilis; of these, 2 died between 30 and 40, 2 between 50 and 60, and 1 between 60 and 70.

The London record is as follows: Out of those who died between 5 and 30 years of age, 6 died be-

* Lancereaux, op. cit.

tween 5 and 20, and 15 between 20 and 30, leaving 17 deaths from acquired syphilis; of these 5 died between 30 and 35, 7 between 35 and 45, and 5 between 45 and 55.

To sum up, therefore, we may say that hereditary syphilis does, up to the age of 20 at least, shorten the expectation of life, and probably up to that of 30.

Thus far, my dear Doctor, I have, as carefully and correctly as the means at my disposal allowed, tried to answer the questions you have put me, and am almost disheartened when I look back and see how evasive and vague the replies have been; but should this article elicit more carefully compiled statistics and more direct and accurate knowledge of the effects syphilis has upon the duration of life, I shall feel compensated for my time and trouble.

This brings us to the third division of your list of questions, which reads:

"In what way does syphilis shorten life?

(a) "Does it do so through the development of some of its own peculiar lesions, and if so to what extent?

(b) "Does it render a person more liable to other diseases, as, for instance, the inflammations—meningitis, pneumonitis, pleuritis, and carditis?

(c) "Does it favor those diseases which are due to a degeneration of the walls of the blood-vessels—apoplexy, aneurism, valvular disease of the heart?

(d) "Does it favor the development of those changes in the brain or spinal cord whose manifestations go by the name of 'insanity,' 'epilepsy,' 'anæsthesia,' etc.?"

There is no tissue of the human body which is not liable, in the course of the disease, to become attacked; so that in the advanced stages of syphilis any one of the forms which you have mentioned may and do occur; thus we find a syphilitic meningitis and a syphilitic pleuritis, a specific neuritis as well as specific mania, epilepsy and arteritis—in short, each non-specific ailment has its specific counterpart. To answer your question as to how these cause death, let me discuss the pathology of syphilis. In a few words, it is this—infiltration, exudation, and molecular destruction. These destructive changes, which go on more rapidly and fatally the older the date of the disease, are usually accompanied by changes of assimilation and nutrition. Bearing in mind what an exhausting disease syphilis is, even from its inception, and what changes it induces in the blood-cells themselves (witness Ricord's and Grassi's researches in that direction), we can the better understand how it may fatally undermine the

general health, and produce death by exhaustion. You will remember, in recording the causes of deaths from syphilis in the London hospitals, what a prominent part this same exhaustion played—indeed, we might call it an exhaustive poisoning. These later stages, the so-called tertiary and quaternary, are especially marked by deep and chronic destruction, which makes them especially dangerous, and, when associated with changes in assimilation, well-nigh hopeless.

We may, therefore, sum up the evidence as follows:

1. Syphilis destroys life from exhaustion, and non-assimilation, due to a poisoning.

2. To a certain extent it does render a person more liable to other diseases, as, for instance, the inflammations; but it does so in this way, by the deposition and breaking down of its own peculiar products in the tissue of the organ attacked, and only indirectly by destruction of the tissue proper of the part.

3. In the same way it favors the development of those changes in the brain or spinal cord whose manifestations go by the names "insanity," "epilepsy," etc.

Now, although all syphilitics are *liable* to be attacked by the later stages, fortunately they, practically, do not go so far; and my own experience leads me to believe that only a small proportion of those who contract the disease suffer afterwards from the tertiary manifestations. This would also seem to be the opinion of M. Landrieux, of Paris, who, in an interesting memoir on "*Les Pneumopathies Syphilitiques*," says: "*Suivant toutes vraisemblances, c'est une manifestation rare de la syphilis, ainsi du reste que toutes espèces d'accidents tertiaries, ce qu'on doit mettre sur le compte des traitements bien dirigés, et sur ce que, chez beaucoup d'individus, le virus s'épuise, disparaît de l'organisme.*"

Your next two questions, my dear Doctor, I shall take the liberty of condensing into one, as they require pretty much the same answer, and that one I shall put into the shape of a few rules, to guide the medical examiner in determining when to, and when not, recommend a syphilitic risk for life assurance.

1. It is, as a rule, better not to insure any patient in whom the disease is still present, no matter how light the symptoms may be, for you cannot predict accurately what may occur.

2. This, however, does not argue that the same man may not, after he has recovered from his disease, be a good risk. You see, Doctor, I believe syphilis to

be a curable disease. The average time allowed for recovery is two years; of course some will need more, some less. Then allow two more years from his last symptoms before becoming a candidate for life assurance; in other words, four years from the date of his disease. This will answer for the majority of cases where the disease has been of medium severity; where the patient's history points to an advanced stage, let three years have elapsed from his last symptoms until his examination.

3. Be especially careful to ask the date of the last symptoms and their character, for the older the date, and the lighter and more superficial the symptoms, the less risk on the life assurance.

4. Persons with a family history of tuberculosis, cancer, and such hereditary diseases, are, at the best, I believe, considered shy cases. They are doubly so when they have had syphilis of an advanced type, e.g., nervous, visceral, or ulcerating syphilis. If their disease has been mild, with the two years' period of recovery above mentioned, *the syphilis* need not stand as a bar to their insurance.

5. Not so, however, those who are the subjects of hereditary syphilis. They are rotten "ab ovo usque ad mala," and if not actually presenting the symptoms of their congenital disease, their vitality is impaired, their nutrition often imperfect, and they are prone to succumb to almost any extra strain which may be imposed upon them. Better have nothing to do with them. And—

6. Inasmuch as patients are proverbially prone to deceive the examiner under such circumstances, not from wilfulness only, but from ignorance also, obtain, so far as you can, a certificate from the physician under whose care they were for the disease.